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Turtles: The Animal Answer Guide

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Abstract
Turtles are among the most universally adored organisms. They exhibit an instantly recognizable morphology, yet lead lives that are cryptic to the casual observer, thus questions naturally surface regarding all sorts of aspects of their biology and history. In the absence of informed experience, mythic explanations have arisen and even become entrenched culturally, often doing no favor to the turtles or to turtle biologists who must combat such nonsense on behalf of the animals. Into this informational void appears this volume prepared by the expert authors, with the assistance of many knowledgeable colleagues.

Disciplines
Behavior and Ethology | Ecology and Evolutionary Biology | Zoology

Comments
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Review
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frequent use of scientific terms, a glossary would have been helpful for readers without a scientific background.

Overall, however, Do Fish Sleep? is a delightful read and makes the diversity and complexity of fish biology accessible to readers in a broad range of age groups and educational backgrounds. It is highly recommended as a supplementary textbook in an ichthyology or aquatic ecology course. This volume, which includes an appendix of major public aquaria in the U.S., can also be used as a guidebook for an aquarium visit. Interested readers may find Moyle and Cech’s Fishes: An Introduction to Ichthyology (2003. Fifth Edition. Upper Saddle River (NJ): Benjamin Cummings) and Barton’s Bond’s Biology of Fishes (2006. Third Edition. Belmont (CA): Thomson Books) helpful, and Nelson’s Fishes of the World (2006. Fourth Edition. Hoboken (NJ): Wiley) is an excellent reference for fish systematics.

Peter J. Park, Biology & Chemistry, Nyack College, Nyack, New York

The Laboratory Zebrafish. The Laboratory Animal Pocket Reference Series.

In the past decade, the number of laboratories utilizing zebrafish as a model system has exploded. Standardized techniques for maintaining common laboratory species have developed over the years and most institutes have centralized animal care to accommodate the needs of the majority of models. Zebrafish facilities are a notable exception, and many institutes do not have an established aquatics infrastructure or significant experience in maintaining large fish colonies. Therefore, zebrafish investigators often run their own facilities or play significant roles in facility design and logistics. Life support and breeding zebrafish that range from diet to factors influencing breeding rates. Life support and facility design parameters are thoughtfully covered. An extensive chapter details common fish diseases, and steps that should be taken to diagnose nose problems and manage sick animals. Finally, the authors provide an overview of techniques for handling zebrafish during a variety of experimental manipulations.

Numerous diagrams and photographs enhance the text and make the material comprehensible to both experienced zebrafish handlers and novices. The attention to detail and comprehensive descriptions are a clear strength of the work. The Laboratory Zebrafish is a valuable reference that will be turned to time and again to solve both simple and complex problems that arise in course of maintaining zebrafish for laboratory use.

Howard Sirotkin, Neurobiology & Behavior, Stony Brook University, Stony Brook, New York

Turtles: The Animal Answer Guide.

Turtles are among the most universally adored organisms. They exhibit an instantly recognizable morphology, yet lead lives that are cryptic to the casual observer, thus questions naturally surface regarding all sorts of aspects of their biology and history. In the absence of informed experience, mythic explanations have arisen and even become entrenched culturally, often doing no favor to the turtles or to turtle biologists who must combat such nonsense on behalf of the animals. Into this informational void appears this volume prepared by the expert authors, with the assistance of many knowledgeable colleagues.

As a biologist who frequently works with turtles and, in so doing, interacts with a number of curious onlookers, I have been asked many of the questions addressed within this fine book. I suspect that the same is true of nearly all turtle biologists and probably the majority of us individually have had to develop responses to the most frequently asked questions. Now, this publication provides thoughtful, well-informed answers. Moreover, this entertaining book limits jargon and therefore is eminently accessible to anyone with curiosity about turtles (so says my 13-year-old), thus its audience should be broad.

This volume consists of 12 chapters that comprise themed sets of questions. These areas apparently are meant to stand alone, thus a modicum of redundancy is present. I read the book carefully and eagerly to learn how these experts answered questions about turtles and was pleased to find essentially no substantive differences in our responses. I could quibble about relatively minor details in answers to some questions (e.g., smooth
and spiny softshells differ considerably in their propensity to bite!). Instead, I want to highlight the especially well-crafted answers to questions about how the public can help turtles and the roles of turtles in religion and mythology. In the end, any turtle lover should find this reasonably priced volume to be a valuable and useful addition to their book collection. We can all hope that providing an accurate understanding of turtles will dispel unfavorable myths, enhance our wonder at this ancient lineage of magnificent creatures, and ensure a successful future for them out of a troubled present.

Fredric J. Janzen, *Ecology, Evolution & Organismal Biology, Iowa State University, Ames, Iowa*

**Lizards in an Evolutionary Tree: Ecology and Adaptive Radiation of Anoles. Organisms and Environments, Number 10.**

By Jonathan B. Losos; Foreword by Harry W. Greene. Berkeley (California): University of California Press. $95.00 (hardcover); $49.95 (paper). xx + 507 p.; ill.; index. ISBN: 978-0-520-25591-3 (hc); 978-0-520-26984-2 (pb), 2009. More biologists should know about Anolis lizards. Jonathan Losos makes a compelling case that Anolis lizards should be viewed in at least an equal light as the classic examples of adaptive radiations we are all familiar with, such as the Galápagos Finches and the Honeycreepers and *Drosophila* of the Hawaiian archipelago. This volume synthesizes decades of research on Anolis lizards, emphasizing their importance in much of the seminal work in ecology and evolutionary biology. Beyond their central role in the theoretical development of such concepts as competition, community organization, and thermal biology, anoles still figure prominently in cutting-edge research in the fields of community ecology, systematics, phylogeography, functional morphology, and evolutionary ecology. It is this pervasive place of Anolis lizards in the classic and current literature that makes this book so accessible, interesting, and broad in scope.

The author begins with a primer of evolutionary biology as a science, and then follows by getting into the details of anole biology. The next three chapters center on characterizing what anoles are and what makes them interesting, but subsequent chapters have a slightly different feel. Although anoles are the centerpiece of each chapter, they are also used as a common-thread model system for discussions of current topics in evolutionary biology, such as phylogenetic inference, life-history evolution, physiological ecology, microevolutionary processes and how to measure them, and speciation. One could easily imagine structuring a whole course in introductory or advanced evolutionary biology using anoles as a case study for each topic. The writing to me had the tone of a conversation, albeit very articulate conversation. The footnotes liberally included throughout the book (477 of them!) at first seemed a strange mode of communication, but they contain a wealth of relevant examples, anecdotes, and trivia that I found fascinating and a significant enhancement of each topic. The footnotes also contributed to the overall feel of the volume that I found welcome, which is that knowing a great deal about the natural history of a group of organisms can allow great insights into ecological and evolutionary processes. Anoles are fascinating, as Losos deftly points out, because we now know so much about their natural history. But as this book so elegantly establishes, it should be that way for other taxa, and I hope this volume demonstrates to nonfield biologists the value and place of natural history in biology.

Another strength of this volume is the emphasis on what we do not know about Anolis lizards. The intense research conducted on anoles since the 1960s has largely been done on the “ecmorphs” that have convergently evolved on Greater Antillean islands in the Caribbean (which are fascinating). Nonetheless, the largest portion of the diversity of the nearly 400 species of *Anolis* lizards is not on those islands, but instead in mainland Central and South America where the evolutionary scenario appears to have unfolded in a very different fashion. Losos puts forth clear, testable hypotheses about unknown aspects of anole biology that only future research can clarify. His open call to researchers to study anoles is refreshing, and after reading this volume, my guess is that many graduate students and young investigators want to answer that call, as the detailed questions outlined in the future directions section of each chapter could occupy and define numerous academic careers. With green anoles (*Anolis carolinensis*) having served as a model system in neuroendocrinology for many decades, and the green anole genome now sequenced, there is huge potential for *Anolis* lizards to jump into the forefront of numerous fields in biology beyond evolutionary ecology, including comparative genomics and evolutionary developmental biology, as the author points out in his book.

The weaknesses in this volume are almost nonexistent given the stated scope and purpose of the book. It is worth noting that general readers with no familiarity with evolutionary biology may struggle with some sections. Although Losos goes above and beyond the call of duty, in general, of carefully explaining sometimes difficult key terminology and concepts throughout, some parts will require